

In the presented work we define non-commutative Gröbner bases including the necessary basis of non-commutative algebra theory and notion admissible ordering. We present non-commutative variant of the Buchberger algorithm and study how the algorithm can be improved. Analogous to the Gebauer-Möller criteria lead us to detect almost all unnecessary obstructions in the non-commutative case. The obstructions are graphically illustrated. The Buchberger algorithm can be improved within redundant polynomials. This work is a summary and its specification of the results of some known authors engaged in this field. Presented definitions are illustrated on examples. We perform proves of some of the statements which have been proven differently by other authors.